

The ABC's of industry: a postdoc program provides a sneak peek into industry careers

Adnan O Abu-Yousif, Erik C Hett, Ann M Skoczenski & Tayyaba Hasan

An innovative partnership allows local companies to educate postdocs about careers in industry.

Academia or industry? It's a question that scientists grapple with early and often throughout their training as graduate students and postdoctoral researchers. Most scientists receive training at academic institutions from mentors who offer great insight about how to excel in academia; however, any concerted effort towards providing postdocs with a broad understanding of careers beyond academia is rare. In fact, postdocs in hospital-based environments are exposed to vastly different cultural experiences when compared to counterparts in basic science departments. The career options for these hospital-based basic scientists can be very different from those of the clinical trainees that are the priority of hospitals, and historically, the infrastructure for research career development and institutional support to explore science career options have been lacking.

In 2005, to address this and other issues of basic scientists, Massachusetts General Hospital (MGH) created the Office for Research Career Development (ORCD; <http://www.massgeneral.org/orcd>) to (i) clarify promotion requirements and career development pathways for research faculty in an academic medical environment; (ii) strengthen career guidance and mentoring offered to faculty and postdoctoral fellows; and (iii) enhance communication within the research community. Soon after the creation of the ORCD, MGH founded the Mass General Postdoc Association (MGPA; <https://www.massgeneral.org/mgpa>) to serve as a postdoc-led extension of the ORCD and provide research advancement, career development, communication and networking, quality-of-life training and advocacy on behalf of MGH's 1,000+ postdocs.

*Adnan O. Abu-Yousif, Erik C. Hett, Ann M. Skoczenski and Tayyaba Hasan are at Massachusetts General Hospital, Boston, Massachusetts, USA
e-mail: aabu-yousif@partners.org*

Initially the MGPA hosted programs for postdocs covering topics from grant writing to mentor development programs. Seeking to leverage the full resources of the greater Boston-Cambridge area, one of us, MGPA co-chair A.O.A., conceived the Industry Exploration Program to establish a connection between MGH postdocs and the many R&D companies in the area. Local organizations such as the Massachusetts Biotechnology Education Foundation (MassBioEd; <http://www.massbioed.org/>) and the Massachusetts Biotechnology Council (MassBio) created many important programs for high school and college stu-

dents, but had not yet delved into providing PhD level trainees with exposure to the culture and opportunities that exist in industry. When approached, Lance Hartford, executive director of MassBioEd, saw a great opportunity to work together to achieve the common goal of educating young PhD level scientists.

Creating the program

The objective was simple: create a program that provides opportunities for postdocs to learn about industry careers by visiting local companies and interacting with industry scientists. As part of the experience, postdocs

Box 1 Considerations when starting an Industry Exploration Program

- Seek internal support and guidance from your institution's research career development leadership.
- Involve the Research Ventures and Licensing (RVL) or technology-transfer division of your institution early in the planning process. To protect potential intellectual property of researchers at your institutions and the participating companies, participating postdocs should be required to attend a seminar hosted by your RVL office that educates postdocs on interactions between academia and industry.
- Prepare a one-page summary of your program that can be shared with companies that clearly outlines the goals of the program and potential activities.
- Use a simple application process, such as the two-part application described below:
Part 1: postdocs prepare a 250-word summary statement that outlines the background of the participant including training, skills and interests. These summary statements should not include specific experimental data in order not to jeopardize intellectual property.
Part 2: postdocs obtain a signed consent form from their advisor to participate.
- If possible, connect with a business association like MassBio to help make valuable connections to industry.
- Limit the number of visits that an individual postdoc can make so that the greatest number of postdocs can participate.
- Require participants to complete a survey upon the completion of the visit and suggest ways to improve the program.
- Select participating postdocs and companies to participate in a panel discussion about the program to help improve the program and to garner further interest in the program from attendees of the panel seminar.
- Develop a secure website that can host applications so that companies can rapidly identify candidates with mutual interests.

Box 2 Potential activities for the day of postdoc visit

- Introductory session describing the company structure, size, and mission statement.
- Tour of the relevant areas of the facility.
- Panel discussion with company scientists describing their career path and what it's like to work in industry.
- One-on-one meetings with several company scientists (at different levels) to discuss science, their transition from academia into industry and career paths.
- Laboratory meeting in the department that best suits the participating postdoc, allowing the postdoc to interact with the group in an intellectual setting.
- Human Resources session that informs postdocs about the application and interview process at the company.

have the opportunity to network with industry experts, engage in scientific discussions, and learn how to prepare for the transition from academia to industry.

The program demonstrates the value of collaborating with business associations like MassBioEd, which provided support from inception to execution. As a result of the partnership, countless PhD scientists will have the opportunity to gain invaluable insight into industry careers.

We hope that the information provided here will serve as a platform to (i) guide other postdoc associations on how to launch similar programs in their region, and (ii) help companies realize the value of interacting with postdocs as potential colleagues.

In the fall of 2009, we began with the support and guidance of the ORCD at MGH to determine an appropriate course of action. Once consensus was achieved on the direction and approach, we worked with Lance Hartford to explore the collaboration and discuss best practices for enlisting local companies. Among the opportunities to connect with industry organizations was the 2009 Annual MassBio meeting in Boston, which provided an opportunity to introduce the program to a handful of influential representatives from surrounding companies. Among the first companies to sign on for the Industry Exploration Program were New England Biolabs, EMD-Serono and AstraZeneca.

Interested parties received a one-page summary outlining the goals of the program after the annual meeting and one-on-one meetings were held to determine criteria for the application process (Box 1). In tandem with these exchanges, we consulted the Research Ventures and Licensing (RVL) division at MGH to ensure that the intellectual property of postdocs, advisors and companies were protected. Ultimately, we concluded that postdoc participants would be required to attend a RVL Division seminar outlining how to protect intellectual property.

We solicited postdoc applications in the fall, which were completed and submitted to AstraZeneca, New England Biolabs and EMD-Serono. Companies evaluated the applications and selected program participants based on interest and expertise. Once matched, we worked with the postdocs and companies to coordinate a single visit for each participating organization.

Site visits were planned at the sole discretion of the company and varied by location. Participants benefitted from a myriad of opportunities with industry scientists and associates during one-on-one meetings, site tours and panel discussions (Box 2).

Surveys distributed immediately after the site visits revealed that postdocs enjoyed these personal interactions with industry scientists and learning about the structure of the organization. In fact, 70% of participants indicated an increased level of interest in the company after their visit.

One participant, Ulysses Sallum, secured a collaboration with Barton Slatko, scientist at New England Biolabs, as a direct result of his participation in the Industry Exploration Program. "It was a coincidence of similar scientific interests that sparked a natural conversation,"

Box 3 A mutually beneficial collaboration

Benefits to participating postdocs:

- A deeper appreciation for what it is like to work in industry
- Insight into the culture at different companies
- Potential scientific collaborations
- Career guidance


Benefits to participating companies:

- Improvement of the company's perception among postdoc scientists
- Exposure to potential colleagues
- Establishment of a working relationship between local academic institutes
- Potential scientific collaborations

said Sallum. "The Industry Exploration Program gives participants an opportunity to see inside the black box of industry and allows participants to experience a broad range of philosophies and opportunities available within industry, which is too frequently considered a single alternative to academia."

The program has been well received by the research community and had one of the three award-winning posters at the 8th Annual National Postdoc Association Meeting in Philadelphia (<http://www.nationalpostdoc.org/>). Feedback from participating companies has also been positive. When asked, industry scientists indicated that they enjoyed the experience and said they wished the program had been available to them when they were making their transition from academy to industry.

With the help of MassBioEd the program will expand to include additional companies this fall to match the broad range of interests that are represented in the MGH postdoc community. These include additional pharmaceutical R&D companies as well as biomedical engineering, patent law firms and medical science liaisons. Ultimately, our goal is to bridge the gap between academia and industry, expanding the long-term benefit to both parties (Box 3). For example, at MGH, the relationships have extended beyond the Industry Exploration program to the Annual Postdoc Poster Day, which has been transformed into a Career Day. The session will include a career option panel featuring many representatives from our industry partners.

Time will tell how many participants of the industry exploration program will pursue careers outside academia, but their experience left all with a better understanding of how to answer the academia or industry question for themselves. Looking forward we can see programs like the one described here leading to many exciting scientific opportunities for academia and industry to work together on pressing issues, and creating more comprehensive programs that train postdocs for successful careers upon the completion of their training. 

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COMPETING FINANCIAL INTERESTS

The authors declare no competing financial interests.